

**WHAT IS CLAIMED IS:**

1           1. For use in a Radio Access Network of a telecommunications system, a  
 2 method comprising deriving control parameters for controlling an in-and-out-of-  
 3 synchronization detection algorithm for a set of combined radio links (radio link set)  
 4 from corresponding cell based parameters.

1           2. A method according to claim 1 where the control parameters for controlling  
 2 the in-and-out-of-synchronization detection algorithm for a set of combined radio links  
 3 (radio link set) are derived from the corresponding cell based parameters of the cells of  
 4 the individual Radio Links of a set of combined radio links (radio link set) in a base  
 5 station.

1           3. A method according to claim 2 where the control parameters are derived by  
 2 taking the largest value of the corresponding cell based parameters.

1           4. A method according to claim 2 where the control parameters are derived by  
 2 taking the lowest value of the corresponding cell based parameters.

1           5. A method according to claim 2 where the control parameters are derived by  
 2 taking a weighed or non-weighed average value of the corresponding cell based  
 3 parameters.

1           6. A method according to claim 2 where the control parameters are derived  
 2 according to any of the methods in claims 3, 4, and 5 for each individual control  
 3 parameter.

1           7. A method according to claim 1 where the control parameters for controlling  
 2 the in-and-out-of-synchronization detection algorithm for a set of combined radio links  
 3 (radio link set) are derived from the corresponding cell based parameters of all cells in  
 4 the base station.

1           8. A method according to claim 7 where the control parameters are derived by  
 2 taking the largest value of the corresponding cell based parameters.

1           9. A method according to claim 7 where the control parameters are derived by  
2 taking the lowest value of the corresponding cell based parameters.

1           10. A method according to claim 7 where the control parameters are derived by  
2 taking a weighed or non-weighed average value of the corresponding cell based  
3 parameters.

1           11. A method according to claim 7 where the control parameters are derived  
2 according to any of the methods in claims 8, 9, and 10 for each individual control  
3 parameter.

1           12. A method according to claim 1 where the control parameters for controlling  
2 the in-and-out-of-synchronization detection algorithm for a set of combined radio links  
3 (radio link set) are derived from the corresponding cell based parameters of any  
4 potential radio link set in a base station, where a potential radio link set corresponds to  
5 any combination of one or more cells in a base station.

1           13. A method according to claim 12 where the control parameters are derived by  
2 taking the largest value of the corresponding cell based parameters.

1           14. A method according to claim 12 where the control parameters are derived by  
2 taking the lowest value of the corresponding cell based parameters.

1           15. A method according to claim 12 where the control parameters are derived by  
2 taking a weighed or non-weighed average value of the corresponding cell based  
3 parameters.

1           16. A method according to claim 12 where the control parameters are derived  
2 according to any of the methods in claims 13, 14, and 15 for each individual control  
3 parameter.

1           17. A method according to claim 1 where the control parameters controlling the  
2 in-and-out-of-synchronization detection algorithm for a set of combined radio links  
3 (radio link set) is controlled by parameters that are derived from the corresponding cell

4 based parameters using any combination of the methods in claims 2, 7, and 12 for the  
5 individual control parameters.

1 18. A method according to claim 17 where the control parameters are derived by  
2 taking the largest value of the corresponding cell based parameters.

1 19. A method according to claim 17 where the control parameters are derived by  
2 taking the lowest value of the corresponding cell based parameters.

1 20. A method according to claim 17 where the control parameters are derived by  
2 taking a weighed or non-weighed average value of the corresponding cell based  
3 parameters.

1 21. A method according to claim 17 where the control parameters are derived  
2 according to any of the methods in claims 18, 19, and 20 for each individual control  
3 parameter.

1 22 A radio access network of a telecommunications system comprising:  
2 an in-and-out of synchronization detector which judges reception quality of a  
3 connection with a mobile user equipment unit;  
4 a control parameter determination function which determines control parameters  
5 to be utilized by the in-and-out of synchronization detector, the control parameter  
6 determination function determining the control parameters for a set of combined radio  
7 links (radio link set) from corresponding cell based parameters.

1 23. An apparatus according to claim 22, wherein the control parameter  
2 determination function derives the control parameters for controlling the in-and-out-of-  
3 synchronization detector for a set of combined radio links (radio link set) from the  
4 corresponding cell based parameters of the cells of the individual Radio Links of a set  
5 of combined radio links (radio link set) in a base station.

1 24. An apparatus according to claim 23, wherein the control parameters are  
2 derived by taking the largest value of the corresponding cell based parameters.

1           25. An apparatus according to claim 23, wherein the control parameters are  
2 derived by taking the lowest value of the corresponding cell based parameters.

1           26. An apparatus according to claim 23, wherein the control parameters are  
2 derived by taking a weighed or non-weighed average value of the corresponding cell  
3 based parameters.

1           27. An apparatus according to claim 23, wherein the control parameters are  
2 derived according to any of the methods in claims 24, 25, and 26 for each individual  
3 control parameter.

1           28. An apparatus according to claim 22, wherein the control parameter  
2 determination function derives the control parameters for controlling the in-and-out-of-  
3 synchronization detection algorithm for a set of combined radio links (radio link set)  
4 from the corresponding cell based parameters of all cells in the base station.

1           29. An apparatus according to claim 28, wherein the control parameters are  
2 derived by taking the largest value of the corresponding cell based parameters.

1           30. An apparatus according to claim 28, wherein the control parameters are  
2 derived by taking the lowest value of the corresponding cell based parameters.

1           31. An apparatus according to claim 28, wherein the control parameters are  
2 derived by taking a weighed or non-weighed average value of the corresponding cell  
3 based parameters.

1           32. An apparatus according to claim 28, wherein the control parameters are  
2 derived according to any of the methods in claims 29, 30, and 31 for each individual  
3 control parameter.

1           33. An apparatus according to claim 22, wherein the control parameter  
2 determination function derives the control parameters for controlling the in-and-out-of-  
3 synchronization detection algorithm for a set of combined radio links (radio link set)  
4 from the corresponding cell based parameters of any potential radio link set in a base

5 station, where a potential radio link set corresponds to any combination of one or more  
6 cells in a base station.

1 34. An apparatus according to claim 33, wherein the control parameters are  
2 derived by taking the largest value of the corresponding cell based parameters.

1 35. An apparatus according to claim 33, wherein the control parameters are  
2 derived by taking the lowest value of the corresponding cell based parameters.

1 36. An apparatus according to claim 33, wherein the control parameters are  
2 derived by taking a weighed or non-weighed average value of the corresponding cell  
3 based parameters.

1 37. An apparatus according to claim 33, wherein the control parameters are  
2 derived according to any of the methods in claims 34, 35, and 36 for each individual  
3 control parameter.

1 38. An apparatus according to claim 22, wherein the control parameter  
2 determination function derives the control parameters controlling the in-and-out-of-  
3 synchronization detection algorithm for a set of combined radio links (radio link set)  
4 from the corresponding cell based parameters using any combination of the methods in  
5 claims 23, 28, and 33 for the individual control parameters.

1 39. An apparatus according to claim 38, wherein the control parameters are  
2 derived by taking the largest value of the corresponding cell based parameters.

1 40. An apparatus according to claim 38, wherein the control parameters are  
2 derived by taking the lowest value of the corresponding cell based parameters.

1 41. An apparatus according to claim 38, wherein the control parameters are  
2 derived by taking a weighed or non-weighed average value of the corresponding cell  
3 based parameters.

42. An apparatus according to claim 38, wherein the control parameters are derived according to any of the methods in claims 39, 40, and 41 for each individual control parameter.

43. An apparatus according to claim 22, wherein the in-and-out of synchronization detector is situated at a base station of the radio access network.

44. An apparatus according to claim 22, wherein the control parameter determination function is situated at a radio network control (RNC) node of the radio access network.

45. An apparatus according to claim 22, wherein the control parameter determination function is situated at a base station of the radio access network.